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X26 Scope Data

Date: 29-JAN-2014

XDPM %: 74 ✓

Agency: Ferguson PD

Serial #: X00-571300 ✓

Existing DPM: Pulse Rate = 17 / 0.924 Δ = 18.40 pps - Image #TEK 0000.png
(# of spaces between pulses)

New DPM: Pulse Rate = N/A / Δ = pps - Image #TEK N/A
(# of spaces between pulses)

Peak Load Voltage = 2.023 KV

Main Phase Charge = 108.0 μC - Image # TEK 0001.png

Pulse Duration = 130.0 μs - Image #TEK 0002.png

Notes:

CEW is operating in spec EL

SPEC RUN JAN 15, 2014

Equipment Used:

Tektronix DPO3034 Oscilloscope S/N: 501953 Calibration Due 04-JUN-14 20-SEP-2014

Tektronix TCP-202 Current Probe S/N: B054660 Calibration Due 20-SEP-2014

Tektronix P5100 Voltage Probe- No calibration required MAR

X26 Customer Specifications

Electrical Output Specifications with a 600 Ω Load	TASER X26 Specifications
Pulse rate	16.5 to 20 pulses per second (pps)
Main phase charge	80 to 125 microcoulombs
Peak loaded main phase voltage	1400 to 2520 volts
Pulse duration: full waveform	105 to 155 microseconds





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X26 Scope Data

Date: 29-JAN-14 XDPM %: 74

Agency: Ferguson PD Serial #: X00-571300

Existing DPM: Pulse Rate= 17 / 0.924 Δ= 18.40 pps - Image #TEK 0000.png
(# of spaces between pulses)

New DPM: Pulse Rate= N/A / N/A Δ= N/A pps - Image #TEK N/A
(# of spaces between pulses)

Peak Load Voltage = 2.023 KV

Main Phase Charge = 108.0 μC - Image # TEK 0001.png

Pulse Duration = 130.0 μs - Image #TEK 0002.png

Notes:

The CEW is operating within specifications.

SPC was run 15-JAN-14

Equipment Used:

Tektronix DPO3034 Oscilloscope S/N: C010658, Calibration Due 04-JUN-2014
Tektronix TCP-202 Current Probe S/N: B054660, Calibration Due 20-MAR-2014
Tektronix P5100 Voltage Probe- No calibration required

X26 Customer Specifications

Electrical Output Specifications with a 600 Ω Load	TASER X26 Specifications
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February 4, 2014

PO Jon Brannan
Ferguson Police Department
222 South Florissant
Ferguson, MO 63135
Phone: 314-922-3765
Email: jbrannan@fergusoncity.com
Case Number: 11-18027

**Report from TASER International, Inc.
Download and Electrical Analysis of X00-571300, TS# 187972**

Report:

Analysis of TASER® X26™ conducted electrical weapon (CEW) with serial number X00-571300. TASER International was asked to conduct an electrical analysis of the CEW to determine if the weapon is operating within manufacturer's specifications and a download analysis of the Activation Log in reference to a field usage on September 17, 2011. The download analysis was performed at the TASER International facility in Scottsdale, AZ on January 28, 2014. The electrical analysis was performed at the TASER International facility in Scottsdale, AZ on January 29 and 31, 2014.

Activation Log Download and Analysis:

The enclosed Activation Log indicates that the TASER X26 CEW with serial number X00-571300 is recording data properly. The computer used to conduct the download was set to Central Standard Time (CST). The times displayed in the Activation log are in Greenwich Mean Time (GMT) and in local CST.

Note that the X26 CEW clock can drift up to ± 4 minutes per month due to internal component tolerances and environmental conditions. Prior to the usage on September 17, 2011, the last time synchronization that took place was on July 18, 2011 (Lines 812 and 813). The internal clock was running for just 2 months after the synchronization, so there could be up to a ± 8 minute drift in the actual trigger activation times shown in the corrected portion of the Activation Log.

The activation times recorded in the Activation Log are the time that the firing cycle ended. The activation durations recorded in the Activation Log are rounded up to the next second, after 10 milliseconds (i.e., a 2.1 second activation will record as 3 seconds).

The enclosed Activation Log indicates that the CEW was trigger activated 5 times on September 17, 2011. The activation times (not including any potential time drift) are:

- Line 947 September 17, 2011 6:26:04 AM CST 1 second duration
- Line 948 September 17, 2011 6:53:17 AM CST 6 second duration
- Line 949 September 17, 2011 6:53:22 AM CST 5 second duration
- Line 950 September 17, 2011 6:53:28 AM CST 5 second duration
- Line 951 September 17, 2011 6:53:34 AM CST 5 second duration

X26 CEW Electrical Analysis:

The X26 CEW with serial number X00-571300 was tested for electrical output to the *TASER Certified Specifications Test Procedure, revision 7.0*.

The X26 CEW was activated twice into an Ohmite® LN100J600 600 Ohm Non-Inductive Resistive Load. The first activation tested the pulse rate of the CEW with the existing DPM installed. The second activation tested the Main Phase Charge, Peak Loaded Voltage, and Pulse Duration. The pulses and waveform were measured using a Tektronix® DPO3034 Oscilloscope (SN C010658), calibrated by Tektronix, Inc. with a due date of June 2014, a Tektronix P5100 Voltage Probe, and a Tektronix TCP-202 Current Probe (SN B054660), calibrated by Tektronix, Inc. with a due date of March 2014. Signal Path Compensation on the oscilloscope was performed before testing on January 15, 2013.

The TASER X26 specifications test procedure is designed to test the critical parameters of the CEW: output charge; pulse duration; and repetition rate. The test protocol uses an average of at least 8 sample pulses for analysis, or, about half a second of output from the CEW. For testing and evaluating the electrical output from the CEW, this sampling method improves the accuracy and consistency of the data versus simply taking a single pulse sampling of the waveform.

The testing performed on the CEW with serial number X00-571300 revealed that the CEW is functioning within published specifications for peak loaded voltage, output charge, pulse duration, and pulse rate.

Enclosed in this report are the graphics of the waveform output testing and below is a table with the testing results for the CEW with serial number X00-571300, tested with the existing DPM at 74% battery capacity:

X26 CEW Serial Number	Main Phase Charge [Micro coulombs]	Pulse Duration [Microseconds]	Pulse Rate [Pulses per second]	Peak Loaded Voltage [Volts]
X26 Published Specifications	80 - 125	105 - 155	19 +1/-2.5	1,400 - 2,520
X00-571300	108.0	130.0	18.40	2,023

The X26 CEW was downloaded after the electrical analysis to ensure proper function of each device and logging. The downloaded Activation Log after the electrical analysis is included with this report along with the original Activation Log.

Inspection:

The X26 CEW with serial number X00-571300 was inspected for damage that could impede functionality or add risk to the Activation Log integrity. The front of the CEW grip, where the user holds the weapon, has a split in the plastic seam (see photo below). This split can cause a loose or broken connection with the CEW's power pack (DPM or TASER CAM) and could result in clock resets, possible data corruption, or even device malfunction in the field.



Summary:

The X26 CEW with serial number X00-571300 is recording data properly. The Activation Log indicates there were 5 trigger activations on September 17, 2011. There may be a ± 8 minute drift in the actual activation times due to the CEW clock time drift.

The X26 CEW with serial number X00-571300 was tested to the *TASER Certified Specifications Test Procedure, revision 7.0*. The test results showed that the CEW is functioning within the manufacturer's published electrical specifications.

The X26 CEW with serial number X00-571300 was inspected for damage and found a split in the plastic seam at the front of the grip.

TASER recommends that all X26 CEWs be downloaded and clocks synchronized at least every 3 months and that spark tests be performed daily before each shift.

The CEW is being returned "as is". Due to the split in the handle seam at the grip, it is suggested to remove the CEW from service and consider a replacement.

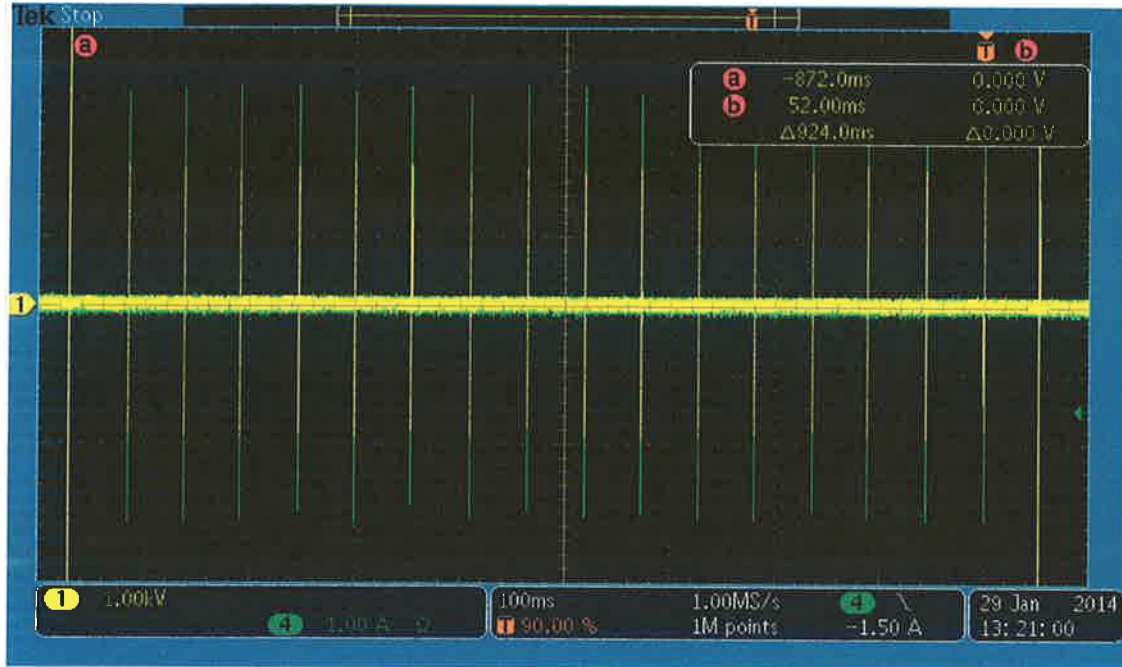
Sincerely,

A handwritten signature in blue ink, appearing to read 'BChiles', is written over a light blue horizontal line.

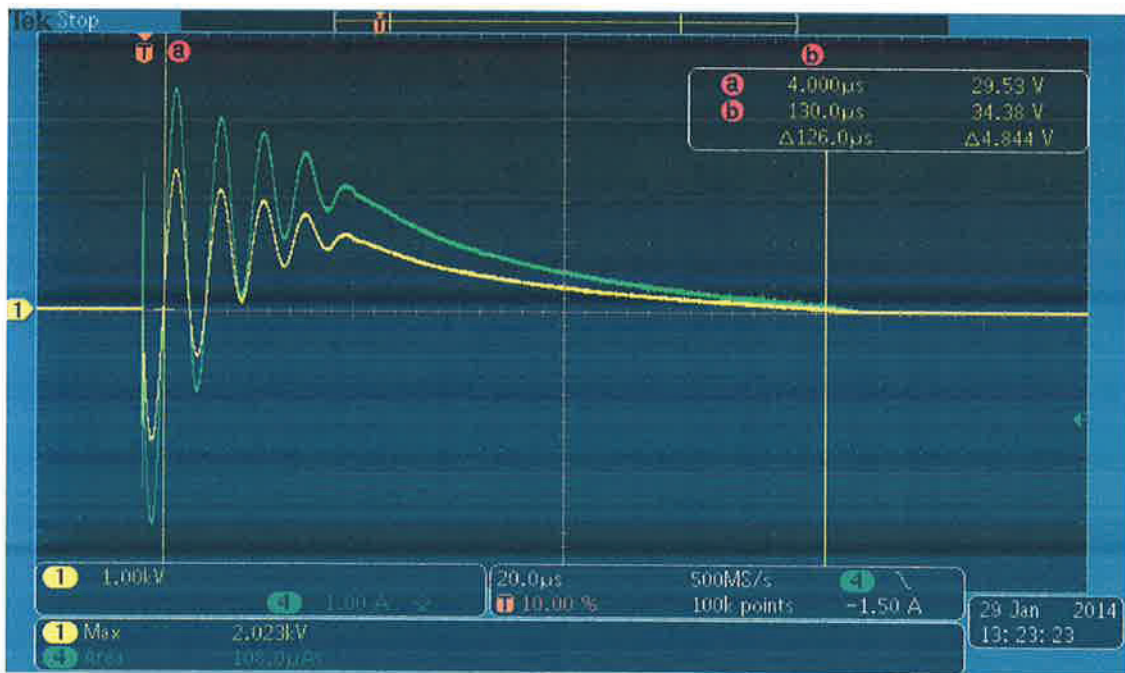
Bryan Chiles
Validation Test Manager

Enclosures:

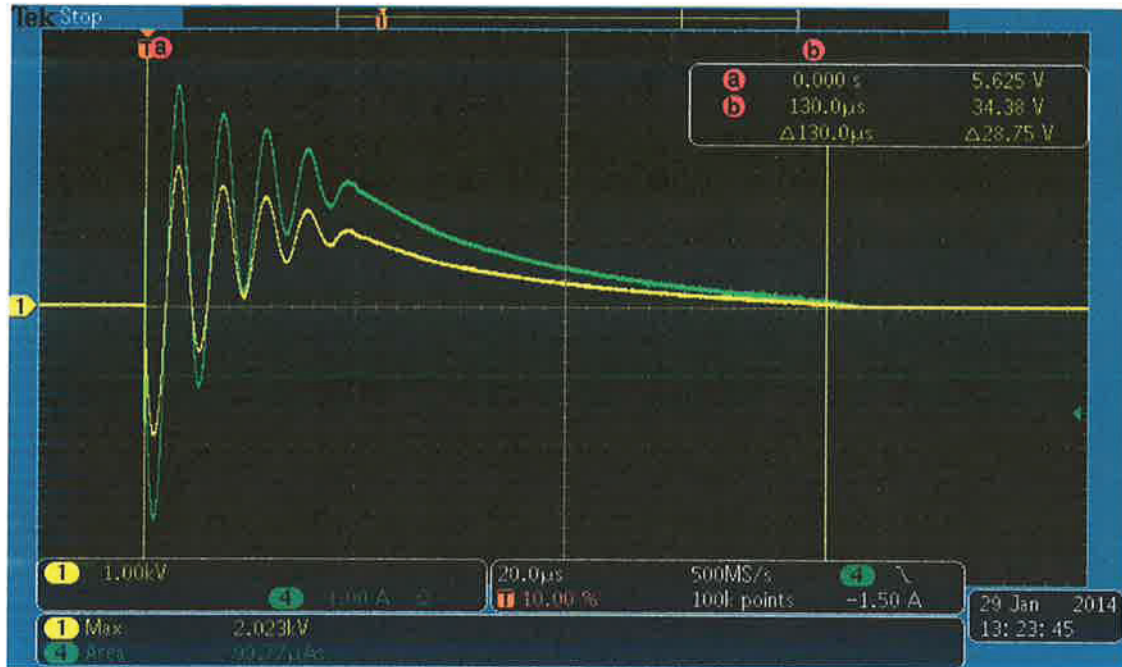
- Original Activation Log for X26 CEW with serial number X00-571300
- Activation Log for X26 CEW with serial number X00-571300 after electrical analysis
- Oscilloscope screen captures for current and voltage waveforms for X26 CEW with serial number X00-571300



Pulse Rate test screen capture for X26 CEW with serial number X00-571300



Charge and Peak Voltage screen capture for X26 CEW with serial number X00-571300



Pulse Duration screen capture for X26 CEW with serial number X00-571300

Original Activation Log Download



TASER Information		Downloaded By	
Serial #	X00-571300	Name	Jami LaChapelle
Model #	X26	Dept	Technical Services
X26 Software Version	22	Rank	Mrs
Dataport CD Version	17.9	Windows Version	Windows XP
Record Date Range	All Data	Report Generated	01/28/14 16:25:13 (local)
Computer Time Zone	Central Standard Time *DST		
Using Daylight Savings Time	Yes		

Recorded Firing Data					
Seq	GMT Time	Local Time	Duration	Temp	Battery
0001	Incomplete Time Change Record				
0002	06/23/10 22:37:33	06/23/10 17:37:33	Old Time		
0003	06/23/10 22:37:34	06/23/10 17:37:34	New Time		
0004	06/23/10 22:38:14	06/23/10 17:38:14	5	22	96
0005	06/23/10 22:38:38	06/23/10 17:38:38	5	23	95
0006	06/23/10	06/23/10	5	24	95

Recorded Firing Data					
Seq	GMT Time	Local Time	Duration	Temp	Battery
0937	09/13/11 02:13:56	09/12/11 21:13:56	3	17	77
0938	09/13/11 02:13:57	09/12/11 21:13:57	1	18	77
0939	09/13/11 11:36:02	09/13/11 06:36:02	1	23	77
0940	09/13/11 19:37:44	09/13/11 14:37:44	1	27	77
0941	09/14/11 03:41:38	09/13/11 22:41:38	1	18	77
0942	09/15/11 14:31:31	09/15/11 09:31:31	1	18	77
0943	09/16/11 03:05:24	09/15/11 22:05:24	1	17	77
0944	09/16/11 11:24:54	09/16/11 06:24:54	1	18	77
0945	09/16/11 20:48:56	09/16/11 15:48:56	1	22	77
0946	09/17/11 03:22:50	09/16/11 22:22:50	1	18	77
0947	09/17/11 11:26:04	09/17/11 06:26:04	1	22	77
0948	09/17/11 11:53:17	09/17/11 06:53:17	6	17	76
0949	09/17/11 11:53:22	09/17/11 06:53:22	5	18	76
0950	09/17/11 11:53:28	09/17/11 06:53:28	5	19	75
0951	09/17/11 11:53:34	09/17/11 06:53:34	5	19	75